NNIS *News*

Gearing up for the 4th Decennial Conference

The 4th Decennial International Conference on Nosocomial and Healthcare-Associated Infections will be held March 5-9, 2000 in Atlanta, GA at the Hyatt Regency Hotel. Comprehensive information is available on the World Wide Web at www.decennial.org.

The program is set but the abstract selection is occurring as of the date of writing this article. Those of us in the Nosocomial Infections Surveillance Activity in the Hospital Infections Program, CDC have been very busy with analysis of NNIS data. We have submitted over a dozen abstracts based on these data to the conference including:

Does Resistance Among Nosocomial Pathogens Differ Between Pediatric and Adult Intensive Care Units?

Factors Associated with Ceftazidime Resistance in *Pseudomonas aeruginosa* Isolates in 29 U.S. Hospitals

Impact of National Benchmarks on Quality Improvement and Vancomycin Use

Antimicrobial Use in Hematology/Oncology Units Differs from Use in Other Hospital Wards

Ability of National Nosocomial Infections Surveillance System Laboratories to Detect Emerging Resistance in Nosocomial Pathogens

Coordinator's Corner

The CDC NNIS staff have spent the summer and fall analyzing data in preparation for the 4th Decennial International Conference on Nosocomial and Healthcare-Associated Infections. Our feature article lists some of the presentations we have planned. We hope to see many of you at the conference and that you will join us for a brief meeting followed by a reception to celebrate your continuing commitment to providing high quality surveillance data for the United States.

This issue includes some interesting findings from the most recent NNIS survey and an update on the proficiency testing. Answers to frequently asked questions about IDEAS and the surveillance components are also featured.

Two items are posted with the newsletter: the December 1999 Semiannual Report and an application for the NNIS Surveillance and IDEAS Training Course. A Quality Monitor Report and reprints of recently published articles will be mailed to you in January.

We extend our warm wishes for a happy holiday season and a safe and healthy new year!

Teresa Horan, NNIS Coordinator

IN THIS ISSUE

1999 NNIS Survey: *Preliminary Results*

The NNIS survey is a vital component of the NNIS data system. It provides important information on the demographic characteristics of NNIS hospitals which are used to risk adjust surveillance data and to identify important trends in the NNIS system. In March 1999, the survey was distributed to all NNIS hospitals. As of December 1999, 228 of approximately 280 hospitals have responded. We appreciate the efforts of all those who have responded thus far and encourage NNIS hospitals who have not responded to do so by January 15, 2000.

The majority of NNIS hospitals are general medical/surgical hospitals (86%) with a smaller number that are either Children's/ Women's hospitals (6%) or Veterans/Military hospitals (8%). Approximately 58% of NNIS hospitals have a major teaching affiliation (58%) while a smaller number have graduate (10%) or limited (15%) affiliations. Approximately 16% of NNIS hospitals are nonaffiliated. Two areas of interest for NNIS staff included whether NNIS hospitals have allogeneic bone marrow transplantation programs (26%) and how NNIS hospitals report high risk nursery data (Level III only, 53%; combined Level II and Level III, 47%). The remainder of the preliminary survey results are presented in the following three tables. As often requested by NNIS participants, **Table 1** presents the geographic distribution of NNIS hospitals by region and also comparative data from the 1997 American Hospital Association (AHA) survey. In **Table 2**, hospital characteristics are presented. In **Table 3**, infection control practitioner characteristics are presented.

NNIS Proficiency Testing Update

To date results have been received from 90% of the 209 participating laboratories that represent 220 NNIS hospitals. The data are being entered and analyzed from those laboratories that have completed the testing. Once we have received, entered, and analyzed the all of the data, we will provide the laboratories and NNIS primary contacts with a feedback report showing the CDC reference results, your laboratory's result, and pooled results from all of the laboratories. We hope to send the report in early January. Many thanks to all for your timely responses.
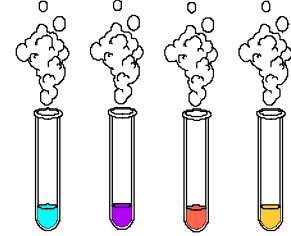
Table 1. Geographic Distribution of NNIS Hospitals

Characteristic	NNIS Survey (%) (n=228)	1997 AHA Survey (%) (n=6,234)
Northeast (ME, NH, VT, CT, MA, NY, NJ, PN, DE, RI)	**27**	15
South (MD, DC, VA, WV, NC, SC, GA, AL, MS, FL, LA, AR, TN, TX, KY)	34	37
Midwest (OH, IN, IL, MI, WI, MN, IA, MO, OK, KS, NE, SD, ND)	23	29
West (MT, WY, CO, NM, AZ, UT, ID, WA, OR, CA, NV, AK, HI)	16	19

Trends in Primary Bloodstream Infections Associated with *Candida* spp. in the United States

Risk Factors for Ventilator-associated Pneumonia: Preliminary Analysis of the Detailed Intensive Care Unit Surveillance Component Study

Risk Factors for Central Line-associated Bloodstream Infections: Preliminary Analysis of the Detailed Intensive Care Unit Surveillance Component Study

Risk Factors for Surgical Site Infection Following Craniotomy Operations

Risk Factors for Surgical Site Infection Following Spinal Fusion Operations

Risk Factors for Surgical Site Infection Following Cholecystectomy: The Importance of the Laparoscope

Risk Factors for Incisional Surgical Site Infections After Cesarean Section: Results of a 5-year Multicenter Study

Risk Factors for Endometritis After Cesarean Section: Results of a 5-year Multicenter Study

While there will be other presentations using NNIS data, on Wednesday afternoon, March 8th, there will be a conference session devoted to NNIS that will include future directions of surveillance in critical care and surgical patients, and a State of the NNIS System talk. Please note that because of the Decennial Conference, the NNIS Conference will be delayed until the fall of 2001. Finally, on Tuesday, March 6th, there will be a NNIS Business Meeting from 5:30–6:30pm. A reception for all NNIS participants and other investigators working with HIP is being planned. More details will be forthcoming via e-mail. We thank all of you who have contributed to the NNIS system and hope you will be able to attend all of the presentations and events at the 4th Decennial Conference.
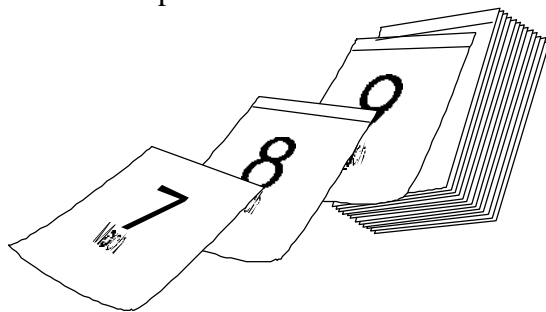
Protocol Pointers

Not a NNIS Operative Procedure

The NNIS system has a very specific definition of what constitutes a NNIS operative procedure. Just because an operation has an ICD-9-CM code that fits into a specific NNIS operative procedure category doesn't make it automatically a NNIS procedure. The incision must be closed primarily and otherwise meet the definition in the NNIS Manual, Section VII. Sometimes a major operation is performed, such as cardiac surgery in neonates, but because of edema, the incision is not closed primarily. Such operations cannot be counted as NNIS operative procedures. If after such an operation, the patient becomes infected at the operative site, that infection may be counted as nosocomial, but not as an SSI; another appropriate major and specific infection site would have to be used (e.g., SST-SKIN to denote superficial infection or CVS-MED for mediastinitis).

Handling Infections that Develop within 48 Hours of ICU Admission

Q: Is a pneumonia or BSI that develops within 48 hours of admission to the ICU in a patient who was intubated or catheterized in the emergency room or operating room reported as an ICU infection?

Table 2. Hospital and ICU Bed Size

Characteristics	N	Mean	Percentiles		
			25%	**50% (median)**	**75%**
Total hospital beds	227	392	250	360	500
Avg daily census	221	269	150	234	350
Total ICU beds	228	43	18	36	60
ICU Bed size					
Burn	17	9.6	6	8	10
Coronary	78	10.7	8	10	12
Cardiothoracic	21	12.2	8	10	16
Medical	73	12.5	10	12	14
Medical Surgical (Major teaching)	73	14.8	10	12	19
Medical Surgical (All others)	77	15.2	11	15	18
Neonatal	78	29.7	18	29	40
Neurosurgical	34	9.0	6	8	10
Pediatric	61	11.7	6	9	16
Respiratory	3	6.3	5	6	8
Surgical	90	13.4	10	12	16
Trauma	13	10.7	10	10	12

Academic Affiliation

	N	Percent
Major	131	58
Graduate	23	10
Limited	33	15
Non affiliated	37	16

Type of Hospital

	N	Percent
General medical/surgical	195	86
Children's or Women's Hospital	14	6
Veterans Hospital or Military	17	8

Bone marrow transplant performed at the hospital?

	N	Percent
Yes	59	26
No	165	73

How are High Risk Nursery surveillance data reported?

	N	Percent
Do not report level II or III HRN data	124	57
Only III reported	50	23
II and III reported together	44	20

Table 3. Infection Control Practitioners at NNIS Hospitals (n=225)

Characteristic	Mean	Percentiles		
		25th	50th (median)	75th
ICPs per hospital	2.4	2	2	3
Occupied Beds (Average Daily Census) per NNIS Hospital ICP	123	81	115	150
Hours per ICP	36	33	40	40
ICP hours per week spent performing:				
Infection control				
Acute Inpatient	21	15	20	27
Other Inpatient	1.9	0	0.7	2.4
Outpatient clinics	1.1	0	0.2	1.4
Outpatient surgery	0.8	0	0.4	1.0
Dialysis	0.3	0	0	0.5
Other outpatient	0.5	0	0	0
Home health	0.6	0	0	0.9
Physician office	0.3	0	0	0.2
Extended care	0.6	0	0	0.8
Employee/Occupational Health	1.6	0	0	1.9
Quality management	2.0	0	1	3
Other activities	4.3	0	2.5	6.4

Protocol Pointers (cont.)

A: Yes, if there was no evidence that the infection was present or incubating at the time of admission to the hospital. It is likely that such early onset infections are associated with placement of the device. However, there is currently no way to attribute an infection to an area of the hospital that is not an inpatient ward or unit. We can only report the ward/unit the patient is on at the time the infection became evident.

This situation is analogous to the maternally-acquired designation for infections in HRN patients. It is understood that such infections are not the result of the HRN stay and therefore could not be prevented by HRN staff. However, since the HRN staff must deal with these infected patients, they have a stake in working with the obstetrician to prevent them. Similarly, SSIs that occur in ICU patients are counted as ICU infections, even though they are likely to be seeded in the operating room and not the result of the post-operative ICU care.

You may use optional fields on the infection worksheet to note the "origin" of such infections so that you can follow-up with "responsible" departments later.

IDEAS INFO

FAQs about IDEAS

The NNIS Technical Support Team has been compiling your frequently asked questions or FAQs. Here are some that concern Y2K compliance, date handling, and general questions about PRODAS.

Y2K Testing/Upgrade to IDEAS v6.06

Q: Can I test IDEAS for Y2K compliancy?
A: When you are ready to test IDEAS for Y2K compliancy, **temporarily copy** IDEAS v6.06 to a workstation/server. Be sure to copy the complete set of directories (folders)/subdirectories/files to a **totally separate machine** than the one used routinely for NNIS data entry and transmission. These folders should be off the root directory (usually C:\) on the test machine. The directories are: \PRODAS, \NNIS, and \NODESYS. Incidentally, there are no licensing issues.

Do **not** confuse the temporary test copy of IDEAS with the production version in your hospital.

Q: Can I send Y2K test data to CDC?
A: No.

Q: What version of IDEAS is Y2K compliant?
A: Version 6.06. This version was thoroughly tested not only by CDC but also by an independent contractor.

Q: How do I obtain the Y2K version of IDEAS?
A: The only way to obtain the Y2K version is by transmitting data to CDC via modem using IDEAS v6.05.

Q: Is PRODAS Y2K compliant?
A: If you are using IDEAS v6.06, then you are using a Y2K compliant version of PRODAS. If you need further information or documentation, please contact Conceptual Software, Inc. at (713) 721-4200.

Date Handling

Q: In the year 2000, how do I enter year date values?
A: For continuity, year values are entered as two digits. For example, you will enter 00 for the year 2000.

Q: How are date values displayed in output produced by IDEAS v6.06?
A: For consistency with the data entry facility of IDEAS, **all** date variables in IDEAS output, such as date of hospital admission, surgery, or infection, are displayed using the MM/DD/YY format. Otherwise, all other date/time data will be displayed using four digit years.

General Questions about PRODAS

Q: What is the function of PRODAS in the NNIS IDEAS software?
A: PRODAS is the underlying programming language for IDEAS. Some of the data entry and all of the data analysis features of IDEAS were created through PRODAS programs.

Q: What version of PRODAS is being used in conjunction with the IDEAS software?
A: Version 3.2.

Q: How do I purchase PRODAS?
A: NNIS now has a distribution license for PRODAS. Therefore, new hospitals will receive the PRODAS software from CDC at no cost.

Q: How do I install PRODAS once I receive it?
A: The installation package for the IDEAS software includes instructions and 3 PRODAS disks. These disks contain versions 3.2 and 4.0 of PRODAS. Version 3.2 must be installed in the \PRODAS directory on the same drive as you intend to install the NNIS IDEAS software. (Even though IDEAS runs only under PRODAS version 3.2, do not attempt to delete 4.0 from the installation disks.)

To execute the installation program for PRODAS, follow these steps:
1. Insert disk #1 and type a:install3 (assuming, of course, that a: is the correct floppy drive).
2. The installation program will ask you "Can we load PRODAS 3.2 into the C:\PRODAS directory? (y/n)"
   Press "y" if you wish to install it on the local workstation. Press "n" if you wish to install it on another drive letter. Once you press "n", you must specify the drive letter and path in the form x:\PRODAS, where x is the letter of the drive on which you wish to install PRODAS and the IDEAS software.
3. The installation program will continue and prompt you to insert Disk #2; insert it.
4. Next, the program will prompt you for Disk #3; insert it.
5. When you are prompted to re-insert Disk #1, do so. You then will be prompted to enter your serial number. Enter Z050457. If prompted for the registered user's name, type CDC.
6. When prompted with the following: "The following directories are on the path, which one should we copy the above files to?....Enter Directory Number (Zero "0" = Do not copy now)", enter 0 (zero).

Q: If my hospital started in the NNIS system before January 1, 1999, how do I get the Y2K version of PRODAS installed on my computer?
A: The only way to get the Y2K version is to transmit data via modem. CDC's server will then download the Y2K version of PRODAS just like the IDEAS upgrades that you receive via modem.
> **Note:** If you are using IDEAS version 6.06, then you already have the Y2K compliant version of PRODAS. If you are using a different version of the IDEAS software, then you must upgrade by sending data to CDC via modem (Option T on the IDEAS Main Menu) before 01/01/2000.

Q: If my hard drive crashes, will I be able to re-install PRODAS using the disks I purchased in the past?
A: Yes, as long as you have installed IDEAS version 6.06; otherwise, you must contact the Services and Support Desk of CDC's Hospital Infections Program at (800) 893-0485, to obtain a copy of the PRODAS software.

Q: How do I get a PRODAS manual?
A: Each NNIS hospital is responsible for purchasing their own copy of the PRODAS manual by contacting Conceptual Software, Inc. (address below).

Q: If I put PRODAS on a network, will I need multiple licenses for the users?
A: No, since IDEAS can only be accessed by one person at a time, a multiuser license is not required.

Q: How can I contact Conceptual Software, the company that makes PRODAS?
A: Conceptual Software, Inc.
         Attn: Henry Feldman, President
         9660 Hillcroft
         Suite 510
         Houston, TX 77096
         Tel: (713) 721-4200
         Fax: (713) 721-4298

Q: What if I need further assistance regarding installation issues, etc? Who can I contact at CDC for technical advice?
A: You may contact HIP's Services and Support Desk at (800) 893-0485. They will either answer your call or relay it to a NNIS technical support team member.

Saving 1999 Infections Entered In 2000

Every January, there are always a few "left-over" December infections that need to be entered into IDEAS. To add these, simply select Option I from the IDEAS Main Menu to pull up the infection data entry screen. Notice that the cursor is in the Patient ID field and that above it is the Infection ID # field. If you have already entered 2000 infections, the Infection ID # will be 00-xxxx. Therefore, to enter a 1999 infection, you must press the up arrow key to move into the Infection ID # field and change the year to 99 **before** entering and saving the left-over infection. (Note that as you type 99 the rest of the field automatically registers the next available Infection ID # for that year.) **Failure to change the year before saving the infection will result in your having to reenter the entire infection.** Once an infection has been saved, no portion of the Infection ID # can be changed.

Thank you for your comforting thoughts....

It has been over four months since my wife, Frances Gaynes, passed away. My two children and I are coming to grips with the reality of life without her. I was simply overwhelmed with the outpouring of concern and support that I received from members of the NNIS system hospitals. I received and have saved scores of cards and letters expressing sympathy and concern. A number of individuals and groups made donations in my wife's memory as well. To all those whose efforts helped us through a time of ineffable sorrow, let me simply but sincerely say "Thank you."

Robert Gaynes, MD

New Toll-free Phone Number for NNIS Support

As mentioned to you in an earlier email message, telephone numbers have changed for CDC NNIS staff. To talk with anyone about either NNIS surveillance or IDEAS technical support, you may now use our new toll-free line: 800-893-0485. The direct dial number is 404-639-6101. The old numbers (404-639-6436, 6438, 6439, and 6444) have been transferred to these new lines.

Members of the HIP Services and Support Desk are on hand from 8:30 am to 4:00 pm Monday through Friday to pick up your call and forward it appropriately. Please identify yourself and be prepared to give your NNIS identification number, telephone number, and a summary of your reason for calling. This information is essential as we are trying to inventory our incoming calls so that we may better serve you. Thank you for your help with this endeavor.

Training Course Dates for 2000

We have scheduled three NNIS Surveillance and IDEAS training courses in 2000. The dates of the courses are May 7-10 and September 24-27. All classes begin on Sunday at noon and end by 1 pm on Wednesday.

This is a beginning course and priority is given to surveillance personnel from hospitals newly enrolled in the NNIS system or who have recently assumed the surveillance position in a program without a previously trained individual. Those who attend the course are responsible for training other staff members. The classes will be held in a computer training room located at the Stanford Building, which is a part of the CDC's Koger Center office complex. We expect that all of the spaces in the

Congratulations!

Carol McLay, BScN, RN, has three new letters to add to her credentials as she's just completed her MPH at the Rollins School of Public Health at Emory University. Carol has been with NISA for the past year and a half working on a variety of projects including ICARE and the NNIS Survey. Unfortunately for us, this means that Carol will be leaving to join her husband, a medical resident, in North Carolina.

Erica Pryor, RN, MN, who joined us in November 1996, has also completed her studies at the Rollins School of Public Health at Emory University. She's now sporting a PhD, having used ICARE data for her thesis. Erica has returned to Birmingham and has taken a faculty position in the UAB School of Nursing.

We thank Carol and Erica for their work with NNIS and ask you to join us in wishing them success in their new endeavors.

January class will be taken by surveillance personnel from newly-enrolled NNIS hospitals, however, because of the current moratorium on accepting new hospitals into the NNIS system, more space should be available to surveillance personnel from existing NNIS hospitals in subsequent classes. We encourage you to apply, particularly for the May and September courses. The course will train surveillance personnel on the DOS-based IDEAS 6.06.

The National Foundation for Infectious Diseases has again extended their generous support for the course. They will provide full funding, which includes airfare, lodging and meals, for one person from each accepted hospital to attend the course. Hospitals are expected to send a second person to the course at the hospital's own expense. By having two trained individuals, the hospital will be able to continue performing high quality NNIS surveillance even when staff turnover occurs. A course application is posted with this newsletter.

The selection of participants to the course occurs approximately 4-5 weeks before each course. You will be notified by FAX when you are selected and an instruction sheet will be sent at that time.

HIP NNIS Personnel

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Epidemiologists Grace Emori, RN, MS *tge1@cdc.gov*	**Guest Researcher** Jeffrey Hageman, MHS *uzh7@cdc.gov*	James Tolson, BS *jst2@cdc.gov*
Scott Fridkin, MD *skf0@cdc.gov*	**Statistician** Jonathan Edwards, MS	**Programmers** Jan Abshire, AS, BS, MPH *jpa2@cdc.gov*
Juan Alonso-Echanove, MD *jee4@cdc.gov*	*jde3@cdc.gov*	**Graphics Specialist** Jeff Wages

1999 NNIS Staff
Left to right: Front: Grace Emori, Robert Gaynes, Gloria Peavy, Juan Alonso-Echanove. Back: Teresa Horan, Chesley Richards, Jeff Hageman, Jonathan Edwards, Rachel Lawton, Jeff Wages, James Tolson.
Missing: Jan Abshire, Scott Fridkin, Tonya Henderson